

## THE LIFE HISTORY OF *SABERA FULIGINOSA FULIGINOSA* (MISKIN) (LEPIDOPTERA: HESPERIIDAE) AND ADDITIONAL HOSTPLANTS FOR THE OTHER MEMBERS OF THE GENUS IN NORTHERN QUEENSLAND

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### Abstract

The early stages of the white-fringed swift, *Sabera fuliginosa fuliginosa* (Miskin) are described and illustrated. New hostplants are recorded for the yellow-streaked swift, *S. dobboe autoleon* (Miskin) and the white-clubbed swift, *S. caesina albifascia* (Miskin).

### Introduction

While examining foliage of the palm *Calamus moti* Bailey near El Arish, (Tully district, northern Queensland) during 1994, two hesperiine larvae were located. These were reared and proved to be *Sabera fuliginosa fuliginosa* (Miskin). Subsequently, a gravid female from Kuranda confined to a plant of *C. moti* oviposited successfully. The resultant larvae completed their life cycle on that plant.

### Life history

**Foodplant.** *Calamus moti* Bailey (Arecaceae).

**Egg** (Fig. 1). Hemispherical; diameter approximately 1 mm; dome-shaped with very fine vertical ribs; cream when first deposited, some changing to deep pink in 3-4 days.

**Larva.** First instar: length 3.5 mm; head shiny black, smooth, with shallow longitudinal groove; prothoracic plate black; body pale straw-coloured; long pale setae on posterior segments. Second to third instars: head black; body translucent grey-green. Fourth instar: head with lower two-thirds and longitudinal groove black, remainder very light brown; body translucent grey-green. Fifth instar (Fig. 2): length 28 mm; head black with two light brown lateral areas; longitudinal groove forming a black triangle joined at the base and top by a deep brown lateral line; body translucent grey-green, dorsal midline dark green.

**Pupa** (Fig. 3). Length 18 mm; light cream-brown covered with white, waxy powder; attached by dark red-brown cremaster.

### Discussion

As with the other Australian species in the genus, eggs of *S. f. fuliginosa* are deposited singly on the upperside of leaves of the foodplant. Larvae construct shelters using a section of the leaf margin, which they isolate at either end and fold underneath. Folding is achieved by construction of a silken hinge and tensioned silken threads. Further shelters are constructed, becoming progressively larger as the larva grows. Mature larvae then form a



Figs 1-3. Early stages of *Sabera fuliginosa fuliginosa*. (1) egg; (2) larva; (3) pupa. Scale bars (1) = 1.5 mm, (2) = 4 mm, (3) = 4.2 mm.

puparium which is detached from the foodplant and falls to the ground or often into water. In the latter situation, the tightly sealed puparium apparently maintains buoyancy. Larvae feed at night.

Only subtle morphological differences exist between the early stages of Australian species of *Sabera* Swinhoe. The early stages of species occurring outside Australia, where they are essentially restricted to mainland New Guinea (Evans 1949; Parsons 1986, 1991, 1998), are poorly known. Parsons (1998) noted that W. W. Brandt had taken larvae of *S. caesina barina* Fruhstorfer together with those of *Mimene melie* (de Nicéville) (Hesperiidae) in mainland Papua New Guinea. Parsons (1998) suggested that, based on Brandt's sketches, the foodplant was possibly *Licula* sp. or *Calamus* sp. (both Arecaceae). Parsons (1998) recorded *Cordyline terminalis* (L.) Kunth (Agavaceae) as a foodplant for *S. dobboe dobboe* (Plotz) in Papua New Guinea, based on Brandt's sketches, and one of us (CJM) has taken the early stages of the subspecies *S. d. hanova* Evans from this plant in northern New Britain and throughout New Ireland (0-700 m), Papua New Guinea.

*Cordyline australis* (G. Forster) Endl. (Agavaceae) is the primary hostplant of *S. dobboe autoleon* wherever the butterfly and plant are sympatric in northern Queensland. Ova and larvae were also found on *Cordyline stricta* (Kunth) Endl. in rainforest near Tully and Julatten. All immature stages have been collected on or near *Cordyline cannifolia* R. Br. throughout the Atherton Tablelands. *Cordyline terminalis* (Common and Waterhouse 1981) and *Cordyline* cultivars (Quick 1982) were the only previously recorded hostplants for this taxon.

At Kennedy (near Cardwell) and near El Arish, larvae of *S. caesina albifascia* have been taken from young *Achontophoenix alexandriae* (F.Muell.) (Arecaceae) palms growing deep within the jungle. Larvae and pre-pupae have also been collected from young *Normanbya normanbyi* (W.Hill) L. Bailey (Arecaceae) palms at Diwan and Cape Tribulation. The only previously known foodplant for this hesperiid in Australia was *Calamus carytoides* C. Martius (Arecaceae) (Wood 1985).

*Sabera* species are remarkable in that, upon emerging, adults remain in an upright position, with their long legs fully extended, whilst expanding their wings. They are capable of flight within minutes of eclosion, possibly minimising time spent on the forest floor or watercourse where they would be very vulnerable to predators. *Sabera* larvae can withstand temporary flooding of their habitats.

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